BRITISH COLUMBIA | BCStats

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Trades Outlook 2010–2020: Highlights

Introduction

This article is excerpted from a recent release on trades occupations. The full report is available online at: http://workbc.ca/docs/BC_tradesoccupationoutlook.pdf

This article summarizes labour market outcome projections for a variety of trades occupations in terms of future occupational supply and demand, suggesting potential shortages or excesses at provincial and economic development regional levels (for example, Vancouver Island/Coast).

The following analysis is based on results from the second edition of the British Columbia Labour Market Outlook (2010-2020), from the British Columbia Labour Market Scenario Model. The model and the annual Outlook provide reliable labour market information to a variety of users. This model allows users to forecast occupational demand and supply on a regional and provincial basis. The analysis also incorporates data from the 2006 Census, Labour Force Survey, as well as the findings from the 2010 BC Apprenticeship Student Outcomes (APPSO) Survey[1].

Trades Occupations

The Trades Outlook Report 2010-2020 predicts that labour market conditions are going to tighten, with labour shortages for the trades sector expected as a whole by 2016. Trades occupations are typically characterized as requiring apprenticeship training, which in most cases includes some college training. Under the National Occupational Classification (NOC), many of these trades occupations are identified as skill level B. In British Columbia, there are more than 140 apprentice trade programs that lead to a government-recognized credential.

For the purpose of this analysis, a representative list of 15 trade occupations was identified. The selected occupations are concentrated in two NOC skill types: trades, transport and equipment operators and related occupations (NOC7), and sales and service occupations (NOC6).

[1] The BC Apprenticeship Student Outcomes (APPSO) Survey is an annual province-wide survey of former apprenticeship students who have completed their final year of apprenticeship training in a participating B.C. post-secondary institution. For further detail see: http://outcomes.bcstats.gov.bc.ca/Default/Home.aspx.

624 - Chefs and Cooks

625 - Butchers and Bakers

627 - Technical Occupations in Personal Services

723 - Machinists and Related Occupations

724 - Electrical Trades and Telecommunication Occupations

725 - Plumbers, Pipefitters and Gasfitters

726 - Metal Forming, Shaping and Erecting Trades

727 - Carpenters and Cabinetmakers

728 - Masonry and Plastering Trades

729 - Other Construction Trades

731 - Machinery and Transportation Equipment Mechanics (Except Motor vehicle)

732 - Automotive Service Technicians

733 - Other Mechanics

737 - Crane Operators, Driller and Blasters

742 - Heavy Equipment Operators

These occupations include those designated trades with the largest number of registered apprentices as well as those where sub-occupational groups are primarily trade occupations. This list represents 79 separate trades and the vast majority (over 90%) of current active apprentices as of July 31, 2011.[2]

Current labour market conditions

According to the Labour Force Survey, BC's unemployment rate[3] in 2010 was 7.6 percent and the employment rate[4] was 60.5 percent. Of those employed, 77.6 percent worked full-time.[5] Some occupations in the trades perform better than the provincial average. For example, contractors and supervisors in trades and transportation had an unemployment rate of 4.0 percent in 2010, with a full-time employment rate of 96.9 percent—nearly 20 percentage points higher than the provincial average. Conversely, trades helpers, construction & transportation labourers had an unemployment rate of 18.3 percent in 2010, although the unemployment rate was higher than the provincial average, the full-time employment rate in this occupation was 83.4 percent (5.8 percentage points higher than the provincial average).

Unemployment rates, annual average 2010[6]

	Unemployment rate
Total, all occupations	7.6
Sales and service occupations	5.7
Chefs & cooks	7.2
Occupation in protective services	4.4
Trades, transport & equipment operators & related occ	8.5
Contractors& supervisors in trades & transportation	4.0
Construction trades	9.5
Other trades occupations	6.4
Transport and equipment operators	7.1
Trades helpers, construction, & transportation labourers	18.3

Source: 2010, Labour Force Survey

Data from the 2010 BC Apprenticeship Student Outcomes (APPSO) survey revealed similar findings; at the time of the survey 86 percent of survey respondents were employed. Most employed respondents had only one job and the vast majority (96%) were employed full-time.

[2] Industry Training Authority (ITA) Performance Measurement Report, August 31, 2011 - http://www.itabc.ca/AssetFactory.aspx?did=2281

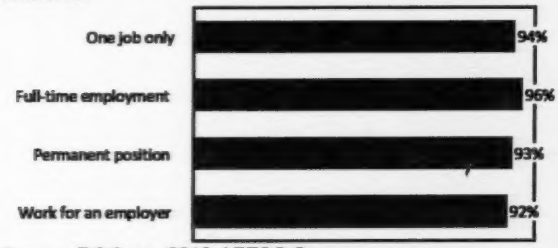
[3] Number of unemployed persons expressed as a percentage of the labour force

[4] The number of persons employed expressed as a percentage of the total population 15 years of age and over

[5] Where full-time employment is defined as working more than 30 hours a week

[6] Due to rounding, values may not add up to 100.

Employment outcome of former apprenticeship students



Source: BC Stats, 2010 APPSO Survey

Income

Estimates of median hourly earnings from the Labour Force Survey revealed that the sales and service occupations earn less per hour than the total occupational average– $13.00 vs. $20.98 in 2010. In 2010, the median hourly wage ranged from a low of $12.00 for chefs and cooks, to a high of $29.54 for contractors and supervisors in trades and transportation.

Similar wage patterns can be seen in the 2010 APPSO survey. At the time of the 2010 survey, the median hourly wage of employed respondents was $29 – the same as it was for 2009 survey respondents. The hourly wage varies widely across occupations. Among the 10 most common occupations, the median hourly wage ranged from a low of $15 for chefs and cooks to a high of $33 for machinery and transportation equipment mechanics.

Wage rate by occupation

Occupation	Respondents	Median Hourly Wage
Machinery & Transportation Equipment Mechanics	240	$33
Printing Press Operators, Commercial Divers, & n.e.c.	30	$32
Electrical Trades & Telecommunication Occupations	304	$31
Contractors & Supervisors, Trades & Related	214	$30
Metal Forming, Shaping & Erecting Occupations	180	$30
Plumbers, Pipefitters & Gas Fitters	261	$29
Machinists and Related Occupations	36	$26
Carpenters & Cabinetmakers	240	$26
Motor Vehicle Mechanics	271	$25
Chefs & Cooks	51	$15

Note: n.e.c. stands for not elsewhere classified.
Source: BC Stats, 2010 APPSO, median wages; 3 digit NOC

Gender

According to the 2006 Census, women were underrepresented in trades occupations. Women made up 15.0 percent of the trades occupational labour force. There were differences in representation between the occupations in the trades. If sales and services occupations were removed from the analysis, the proportion of women in the trades labour force would have fallen to 3.0 percent. The trades/transport (NOC7) occupations remained dominated by males. That said, there have been improvements in women breaking into traditionally male-dominated occupations. For example, according to the 1996 Census, the proportion of women in labour force as butchers and bakers was 34.7 percent, but in 2006, the share increased to 47.1

percent (an increase of 12.4 percentage points).

Aboriginal Identity

In 2006, the Aboriginal share of the population in BC was 4.8 percent, making them a potentially important element of the trades sector. The representation of Aboriginal peoples in all occupations in 2006 was 4.0 percent; this representation did not uniformly translate to all trades occupations. It was comparable for chefs and cooks (4.0%) and mechanics (4.0%); however, there was a stronger Aboriginal presence in construction trades (5.4%). Conversely, leveraging Aboriginal strength into metal forming, shaping and erecting occupations is justified, as their share is 2.4 percent.

Immigrants

The 2006 Census showed immigrants represented 27.5 percent of the total provincial population. Although the immigrant representation in the trades was just below the provincial average, there were some exceptions. Immigrants had a higher representation in sales and service (NOC6) trade occupations and machinists and related occupations. One observation that appears to be consistent across all classifications of immigrants—based on landing date: very recent (less than 5 years), recent (5 to 10 years) and established (10 plus years)—is that there is low representation in the crane operators, drillers and blasters as well as the heavy equipment operators occupations.

Provincial Outlook

According to the outlook, in 2010, employment in the trades occupations made up 11.1 percent (over 251,000) of provincial employment. It is projected that by 2020, there will be a slight decline in trades representation in provincial employment—a drop of 0.2 percentage points will yield 10.9 percent trades representation. However, there will be considerable growth in overall trades employment as total employment is projected to include 282,400 trades workers in 2020. This projection is due to employment being driven by variables such as confirmed construction projects, and variables of this nature can change in the long-term, driving projected employment up or down, as the number of projects increases or decreases. So while employment is growing on average over the horizon, the demand for workers increases at a faster rate, leading to a tight labour market condition (a deficit in workers supplied compared to those workers in demand) in the second half of the projection.

As noted, each trade occupational grouping has a unique projected employment growth. Technical occupations in personal services (+1.6%); chefs and cooks (+1.6%), machinists and related occupations (+1.3%) and automotive services technicians (+1.3%) are among the fastest projected growing occupations in terms of employment. Conversely, it is expected that occupations in the crane operators, drillers and blasters (+0.9%); masonry and plastering trades (+0.9%) and carpenters and cabinetmakers (+0.9%) groupings are likely to experience the slowest employment growth.

Trade Occupations Employment: 2010 and 2020

	2010	2020	Annual Average % Change
All Occupations	2,256,500	2,589,100	1.4
Chefs and Cooks	35,870	41,990	1.6
Butchers and Bakers	9,020	10,050	1.1
Technical Occupations in Personal Services	16,140	18,850	1.6
Machinists and Related Occupations	4,130	4,700	1.3
Electrical Trades and Telecommunication Occupations	20,690	23,090	1.1
Plumbers, Pipefitters and Gasfitters	12,030	13,330	1.0
Metal Forming, Shaping and Erecting Trades	16,570	18,560	1.1
Carpenters and Cabinetmakers	35,280	38,440	0.9
Masonry and Plastering Trades	12,470	13,670	0.9
Other Construction Trades	23,020	25,310	1.0
Machinery and Transportation Equipment Mechanics (Except Motor vehicle)	21,210	23,610	1.1
Automotive Service Technicians	25,110	28,710	1.3
Other Mechanics	3,940	4,440	1.2
Crane Operators, Driller and Blasters	2,170	2,380	0.9
Heavy Equipment Operators	13,700	15,270	1.1
Total trades	**251,340**	**282,390**	**1.2**

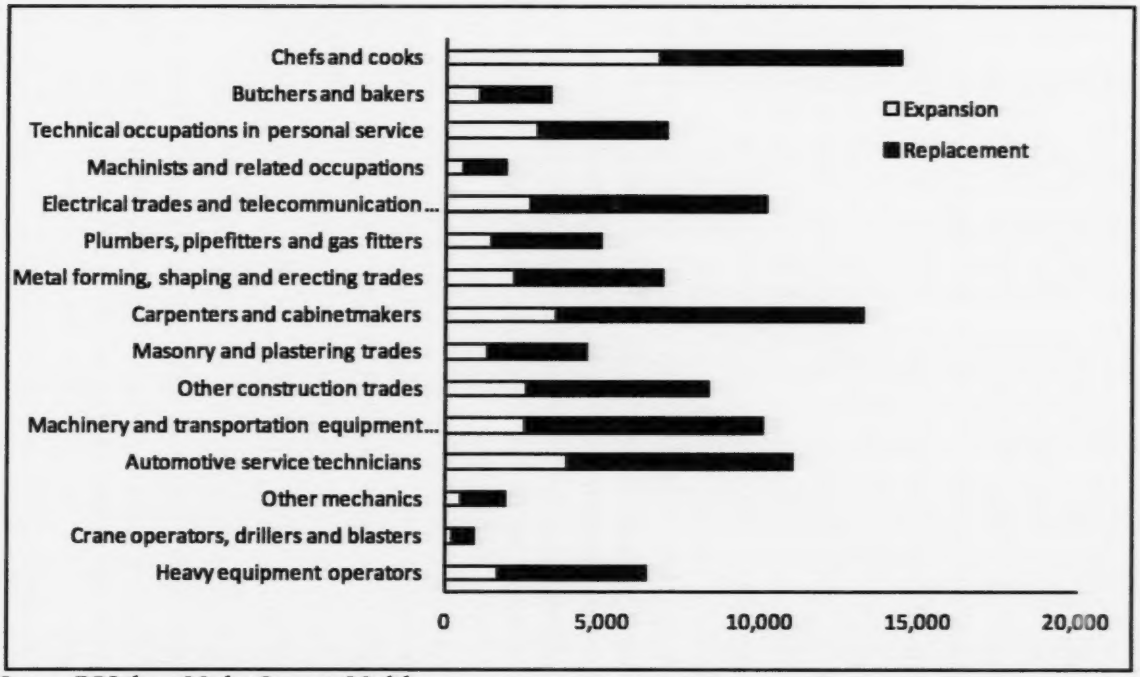
Source: BC Labour Market Scenario Model

It is important to note that the demand for employment in the trades/transport (NOC7) group is driven largely by construction activity within a region. To this end the GDP portion that is attributed to the construction sector has grown at an average rate of 5.6 percent—this is 3.2 percentage points greater than the average total GDP growth of the economy from 2000 to 2010 (2.4%)[7].

Economic and demographic growth in the province will result in higher demand for trades occupations between 2010 and 2020. The other occupational demand driver over this period will be replacement demand, demand necessary to compensate for exits due to re-retirements and deaths. Replacement demand is driven by the aging of the population. Interestingly, of all the trades occupations, only chefs and cooks have near equal parts of expansion and replacement demand comprising the total projected occupational demand. All the other trades occupations demand rely primarily the on replacement demand component.

[7] Statistics Canada (CANSIM tables 379-0025 and 379-0026), gross domestic product chained (2002).

Expected demand for trades occupations, British Columbia: 2010 to 2020



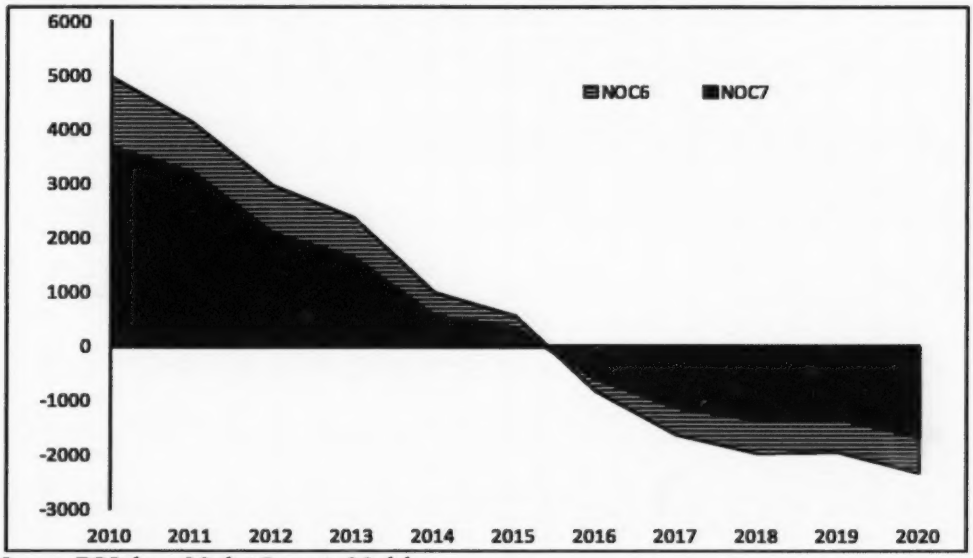
Source: BC Labour Market Scenario Model

Overall, in British Columbia, annual average growth in total occupational demand will reach 1.4 percent, adding approximately 1.03 million job openings over the outlook period (2010 to 2020). In comparison, the outlook for trades occupations will see an average 1.2 percent growth annually, which will generate over 104,600 job openings by 2020.

Over the projection period (2010 to 2020), annual average growth in demand for the trades occupation labour (+1.2%) will outstrip labour supply growth (+0.9%). As illustrated, the excess supply (over demand) position for trades occupations in B.C. will go from 4,990 to -2,340 in 2020, indicating more demand than needs to be met by the supply.

This projection suggests that at the provincial level, there will be excess demand for the trades occupations, meaning that the number of workers required is going to exceed the number of workers in the labour supply leading to tight labour market conditions. It is projected that by 2016, trades occupations as whole will have a deficit of workers.

Excess supply outlook (supply less demand), British Columbia: 2010 to 2020

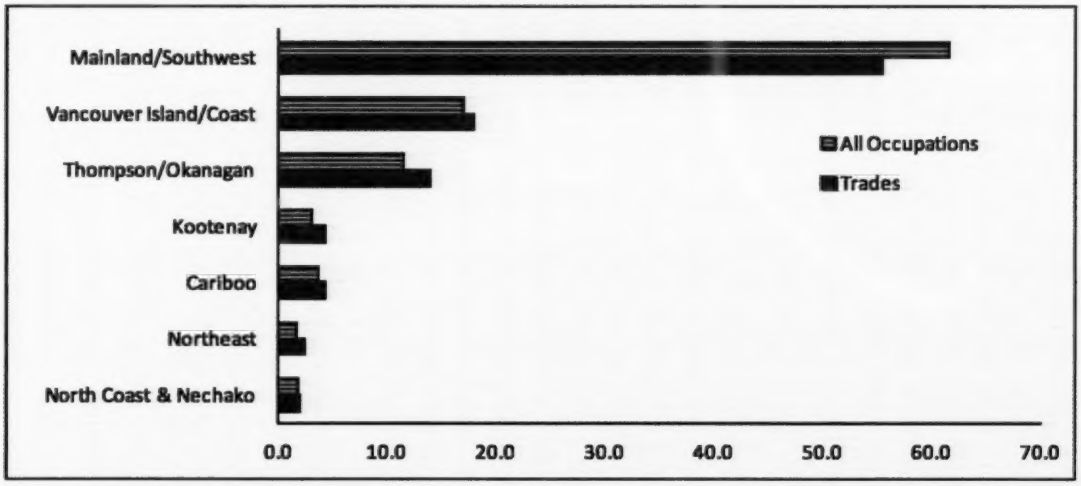


Source: BC Labour Market Scenario Model

Regional Outlook

Of the seven regions in the outlook, each has its own unique set of projections. The majority of trades employment is projected to be found in Mainland/Southwest region at 57.4 percent. The next highest is Vancouver Island/Coast region at 16.4 percent, just ahead of Thompson/Okanagan (13.4 percent). In descending order, next comes Kootenay (4.1%), Cariboo (3.8%), Northeast (2.5%) and North Coast & Nechako (2.3%) region with the smallest projected trades employment share.

Regional distribution of trades and all occupation employment (percent of total): 2010



Source: BC Labour Market Scenario Model

Although the Mainland/Southwest boasts a huge proportion of projected total trades employment, the trades only account for a projected 9.9 percent of employment—the lowest proportion of the regions. In this category, the Northeast region is the leader at 16.3% of its total employment going to trades occupations. The Kootenay (15.0%) region has the next highest projected proportion of trades employment, followed by, North Coast & Nechako (13.8%), Thompson/Okanagan (13.2%), Cariboo (12.7%) and finally Vancouver Island/Coast region (11.1%) follows up behind the pack.

Trades Employment 2010 and 2020

	Trades	All Occupations	Percent Trades
2010			
Vancouver Island/Coast	44,940	383,800	11.7
Mainland/Southwest	139,050	1,388,400	10.0
Thompson/Okanagan	34,820	257,200	13.5
Kootenay	10,810	69,400	15.6
Cariboo	10,760	80,300	13.4
North Coast & Nechako	4,920	40,400	12.2
Northeast	6,020	37,000	16.3
British Columbia	**251,340**	**2,256,500**	**11.1**
2020			
Vancouver Island/Coast	46,320	416,730	11.1
Mainland/Southwest	162,220	1,632,210	9.9
Thompson/Okanagan	37,790	286,660	13.2
Kootenay	11,700	77,770	15.0
Cariboo	10,760	85,300	12.7
North Coast & Nechako	6,400	46,360	13.8
Northeast	7,170	44,070	16.3
British Columbia	**282,390**	**2,589,100**	**10.9**

Source: BC Labour Market Scenario Model (Note: Regions may not sum to B.C. total due to rounding. Percent Trades is based on rounded figures [trades/all occupations]).

As noted in the next table, demand for specific occupations is notably different for each region. For example, in Cariboo region, the demand for the machinery and transportation equipment mechanics is 23.1 percent, while the same occupation group only garners 7.7 percent of in Mainland/Southwest region.

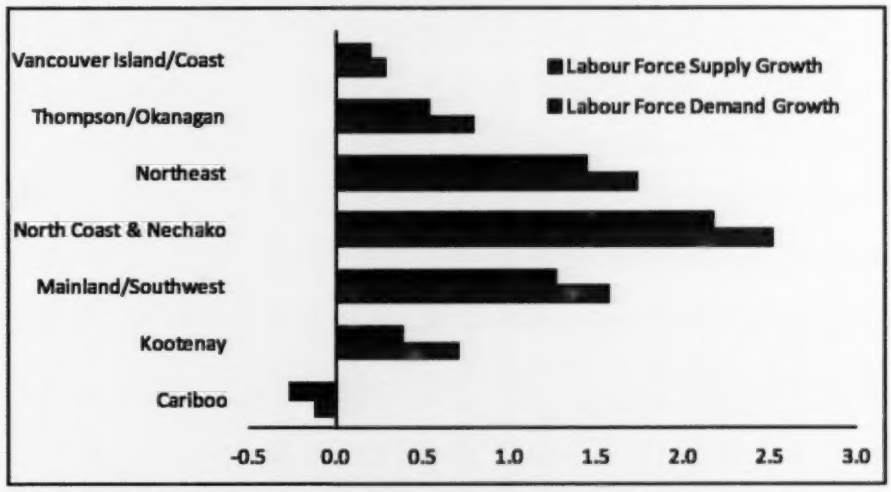
Trades labour demand, share of total trades (percent): 2010 to 2020

	Vancouver Island/Coast	Mainland/ Southwest	Thompson/ Okanagan	Kootenay	Cariboo	North Coast & Nechako	Northeast
Butchers and bakers	3.6	3.4	2.4	3.3	1.9	1.9	1.7
Machinists and related occupations	1.4	2.3	1.0	0.9	1.6	0.6	1.0
Plumbers, pipefitters and gas fitters	4.2	4.9	4.3	5.2	2.8	5.0	6.5
Carpenters and cabinet-makers	13.2	12.5	13.7	14.4	2.8	15.0	11.3
Other construction trades	7.0	9.1	7.5	4.9	0.6	5.8	5.8
Automotive service technicians	11.4	10.8	10.3	6.4	15.0	7.5	6.8
Crane operators, drillers and blasters	0.9	0.7	0.9	1.6	0.6	1.4	0.3
Total Trades	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Source: BC Labour Market Scenario Model

Each region has its own rates of labour supply and labour demand growth. North Coast & Nechako is expected to have the largest rates of supply and demand growth—the growth of the labour demand is expected to outstrip the labour supply by 0.3 percentage points, causing a deficit of workers. Conversely, the demand and supply for and of workers in the Cariboo region are expected to contract at an annual average rate of -0.1 percent and -0.3 percent, respectively, further highlighting the differences between the regions.

Regional supply/demand annual average growth (percent): 2010 to 2020



Source: BC Labour Market Scenario Model

Conclusions

BC's outlook is strong, even though demand for trades is projected to grow a slower rate than the provincial "all occupation" average. Women are still underrepresented in some of the trades occupations, but from the 1996 Census, to the 2006 Census there have been a number of improvements. Aboriginal peoples are still facing labour market challenges in terms of participation rates, but according to the 2006 Census, of Aboriginal peoples 15 years or older, 12.5 percent earned an apprenticeship or trade certificate—this is 1.6 percentage points greater than the proportion of non-Aboriginal peoples that attained a trade credential. The provincial trades outlook is positive as well, as all trade occupations are expected to enjoy positive annual average growth in employment over the outlook period (2010 to 2020).

For more information, graphs and charts detailing the provincial and regional trades outlook for BC, please review the British Columbia Trade Occupations Outlook: 2010 to 2020 at www.workbc.ca, or http://workbc.ca/docs/BC_tradesoccupationoutlook.pdf